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Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1 (currently amended). A seal adapted for use with a valve having a valve closing member rotatably mounted within a housing, said seal comprising:

a flexible, resilient loop having a perimeter sealing surface and a perimeter mounting surface positioned substantially opposite to said perimeter sealing surface, said perimeter sealing surface facing in a first radial direction and being engageable with one of said valve closing member and said housing to sealingly close said valve, said perimeter mounting surface facing in a second radial direction opposite said first radial direction and being engageable with the other of said valve closing member and said housing for mounting said loop within said valve;

a first surface facing in a first axial direction and extending between said perimeter sealing surface and said perimeter mounting surface;

a second surface positioned facing in a second axial direction opposite to said first surface and extending between said perimeter sealing surface and said perimeter mounting surface; and

an open channel positioned on extending in a substantially radial direction along one of said first and second surfaces and extending from said perimeter mounting surface toward said perimeter sealing surface.

2 (original). A seal according to Claim 1, wherein said perimeter sealing surface faces inwardly of said loop and is engageable with said valve closing member, said perimeter

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mounting surface facing outwardly of said loop and being engageable with said housing for mounting therein.

3 (original). A seal according to Claim 1, wherein said perimeter sealing surface faces outwardly of said loop and is engageable with said housing, said perimeter mounting surface facing inwardly of said loop and being engageable with said valve closing member for mounting thereon.

4 (currently amended). A seal according to Claim 1, further comprising a plurality of said open channels positioned in spaced relation from one another on ~~said one of~~ said first and second surfaces around said loop.

5 (currently amended). A seal according to Claim 1, further comprising a plurality of said open channels positioned on said first and said second surfaces.

6 (original). A seal according to Claim 1, wherein said loop is substantially circular in shape.

7 (original). A seal according to Claim 6, wherein said perimeter sealing surface has a wedge-shaped cross sectional profile.

8 (original). A seal according to Claim 7, wherein said perimeter sealing surface has a curved cross-sectional profile.

9 (original). A seal according to Claim 7, wherein said wedge shaped cross section is asymmetrical.

10 (currently amended). A seal according to Claim 1, ~~further comprising a void space positioned in~~ wherein said

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perimeter mounting surface is configured to define a void space positioned therein.

11 (withdrawn). A seal according to Claim 10, wherein said void space comprises a groove extending around said perimeter mounting surface.

12 (withdrawn). A seal according to Claim 11, wherein said groove extends continuously around said entire perimeter mounting surface.

13 (withdrawn). A seal according to Claim 10, wherein said void space comprises a plurality of grooves extending around said perimeter mounting surface.

14 (withdrawn). A seal according to Claim 13, wherein said grooves extend continuously around said entire perimeter mounting surface.

15 (withdrawn). A seal according to Claim 13, wherein said grooves extend around said perimeter mounting surface in a zig-zag pattern.

16 (withdrawn). A seal according to Claim 10, wherein said void space comprises a plurality of grooves positioned in spaced relation around said perimeter mounting surface, said grooves being oriented transversely to a plane defined by said loop.

17 (withdrawn). A seal according to Claim 16, wherein said grooves are oriented perpendicular to said plane.

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18 (withdrawn). A seal according to Claim 10, wherein said void space comprises a plurality of dimples positioned in said perimeter mounting surface.

19 (currently amended). A seal according to Claim 10, ~~wherein said void space is defined by further comprising a raised surface portion extending outwardly from said perimeter mounting surface, said void space being adjacent to said raised surface portion.~~

20 (original). A seal according to Claim 19, wherein said raised surface portion extends around said perimeter mounting surface.

21 (withdrawn). A seal according to Claim 10, wherein said void space is defined by angularly orienting portions of said perimeter mounting surface relative to one another.

22 (currently amended). A seal adapted for use with a valve having a rotatable valve closing member mounted within a housing, said seal comprising:

a flexible, resilient loop having a perimeter sealing surface and a perimeter mounting surface positioned substantially opposite to said perimeter sealing surface, said perimeter sealing surface facing in a first radial direction and being engageable with one of said valve closing member and said housing to sealingly close said valve, said perimeter mounting surface facing in a second radial direction opposite said first radial direction and being engageable with the other of said valve closing member and said housing for mounting said loop within said valve;

a first surface facing in a first axial direction and extending between said perimeter sealing surface and said perimeter mounting surface;

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a second surface positioned facing in a second axial direction opposite to said first surface and extending between said perimeter sealing surface and said perimeter mounting surface, an open channel extending in a substantially radial direction along one of said first and said second surfaces from said perimeter mounting surface toward said perimeter sealing surface; and

~~a void space positioned in said perimeter mounting surface~~ being configured to define a void space therein.

23 (original). A seal according to Claim 22, wherein said perimeter sealing surface faces inwardly of said loop and is engageable with said valve closing member, said perimeter mounting surface facing outwardly of said loop and being engageable with said housing for mounting therein.

24 (original). A seal according to Claim 22, wherein said perimeter sealing surface faces outwardly of said loop and is engageable with said housing, said perimeter mounting surface facing inwardly of said loop and being engageable with said valve closing member for mounting thereon.

25 (original). A seal according to Claim 22, wherein said loop is substantially circular in shape.

26 (original). A seal according to Claim 25, wherein said perimeter sealing surface has a curved cross-sectional profile.

27 (withdrawn). A seal according to Claim 22, wherein said void space comprises a groove extending around said perimeter mounting surface.

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28 (withdrawn). A seal according to Claim 27, wherein said groove extends continuously around said entire perimeter mounting surface.

29 (withdrawn). A seal according to Claim 22, wherein said void space comprises a plurality of grooves extending around said perimeter mounting surface.

30 (withdrawn). A seal according to Claim 29, wherein said grooves extend continuously around said entire perimeter mounting surface.

31 (withdrawn). A seal according to Claim 29, wherein said grooves extend around said perimeter mounting surface in a zig-zag pattern.

32 (withdrawn). A seal according to Claim 29, wherein said grooves are positioned in spaced relation around said perimeter mounting surface and oriented transversely to a plane defined by said loop.

33 (withdrawn). A seal according to Claim 32, wherein said grooves are oriented perpendicular to said plane.

34 (withdrawn). A seal according to Claim 22, wherein said void space comprises a plurality of dimples positioned in said perimeter mounting surface.

35 (withdrawn). A seal according to Claim 34, wherein said dimples are positioned in spaced relation around said perimeter mounting surface.

36 (original). A seal according to Claim 22, wherein said void space is defined by a raised surface portion

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extending outwardly from said perimeter mounting surface, said void space being adjacent to said raised surface portion.

37 (original). A seal according to Claim 36, wherein said raised surface portion extends around said perimeter mounting surface.

38 (withdrawn). A seal according to Claim 22, wherein said void space is defined by angularly orienting portions of said perimeter mounting surface relative to one another.

Claim 39 (canceled).

40 (currently amended). A seal according to Claim ~~39~~ 22, further comprising a plurality of said open channels positioned in spaced relation from one another on ~~said one of~~ said first and second surfaces around said loop.

41 (currently amended). A seal according to Claim ~~39~~ 22, further comprising a plurality of said open channels positioned on said first and said second surfaces.

42 (currently amended). A valve for controlling fluid flow, said valve comprising:

a housing;

a valve closing member rotatably mounted within said housing and movable between an open position permitting fluid flow through said valve, and a closed position preventing said fluid flow; and

a flexible, resilient loop positioned within said housing surrounding said closing member, said loop having a perimeter sealing surface facing in a first radial direction and engageable with one of said closing member and said housing for providing a fluid tight seal therebetween when

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said closing member is in said closed position, said loop having a perimeter mounting surface facing in a second radial direction opposite said first radial direction and being engageable with the other of said closing member and said housing for mounting said loop thereon, said loop further comprising first and second surfaces extending between said perimeter mounting surface and said perimeter sealing surface, said ~~second~~ first surface being positioned facing in a first axial direction and said second surface facing in a second axial direction opposite to said first surface, an open channel being positioned on extending in a substantially radial direction along one of said first and said second surfaces and extending from said perimeter mounting surface toward said perimeter sealing surface.

43 (currently amended). A ~~seal~~ valve according to Claim 42, further comprising a cavity positioned within said housing substantially surrounding said valve closing member, said perimeter mounting surface facing outwardly of said loop and being positioned within said cavity for mounting therein, said perimeter sealing surface facing inwardly of said loop and extending from said cavity for engagement with said valve closing member.

44 (currently amended). A ~~seal~~ valve according to Claim 42, further comprising a cavity positioned within and substantially surrounding said valve closing member, said perimeter mounting surface facing inwardly of said loop and being positioned within said cavity for mounting therein, said perimeter sealing surface facing outwardly of said loop and extending from said cavity for engagement with said housing.

45 (currently amended). A valve according to Claim 42, wherein said loop further comprises a plurality of said open



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channels positioned in spaced relation from one another in said one surface around said loop.

46 (currently amended). A valve according to Claim 42, wherein said loop further comprises a plurality of said open channels positioned in said first and said second surfaces.

47 (currently amended). A valve according to Claim 42, wherein ~~said seal further comprises a void space positioned in~~ said perimeter mounting surface is configured to define a void space positioned therein.

48 (withdrawn). A valve according to Claim 47, wherein said void space comprises a groove extending around said perimeter mounting surface.

49 (withdrawn). A valve according to Claim 48, wherein said groove extends continuously around said entire perimeter mounting surface.

50 (withdrawn). A valve according to Claim 47, wherein said void space comprises a plurality of grooves extending around said perimeter mounting surface.

51 (withdrawn). A valve according to Claim 50, wherein said grooves extend continuously around said entire perimeter mounting surface.

52 (withdrawn). A valve according to Claim 50, wherein said grooves extend around said perimeter mounting surface in a zig-zag pattern.

53 (withdrawn). A valve according to Claim 47, wherein said void space comprises a plurality of grooves positioned in

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spaced relation around said perimeter mounting surface, said grooves being oriented transversely to a plane defined by said loop.

54 (withdrawn). A valve according to Claim 53, wherein said grooves are oriented perpendicular to said plane.

55 (withdrawn). A valve according to Claim 47, wherein said void space comprises a plurality of dimples positioned in said perimeter mounting surface.

56 (original). A valve according to Claim 47, wherein said void space is defined by a raised surface portion extending outwardly from said perimeter mounting surface, said void space being adjacent to said raised surface portion.

57 (original). A valve according to Claim 56, wherein said raised surface portion extends around said perimeter mounting surface.

58 (withdrawn). A valve according to Claim 47, wherein said void space is defined by angularly orienting portions of said perimeter mounting surface relative to one another.

59 (currently amended). A valve for controlling fluid flow, said valve comprising:

a housing;

a valve closing member rotatably mounted within said housing and movable between an open position permitting fluid flow through said valve, and a closed position preventing said fluid flow; and

a flexible, resilient loop positioned within said housing surrounding said closing member, said loop having a perimeter sealing surface facing in a first radial direction

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and engageable with one of said closing member and said housing for providing a fluid tight seal therebetween when said closing member is in said closed position, said loop having a perimeter mounting surface facing in a second radial direction opposite said first radial direction and being engageable with the other of said closing member and said housing for mounting said loop thereon, said loop further comprising first and second surfaces extending between said perimeter mounting surface and said perimeter sealing surface, said first surface facing in a first axial direction and said second surface facing in a second axial direction said second surface being positioned opposite to said first surface, a void space being positioned in an open channel extending in a substantially radial direction along one of said first and said second surfaces from said perimeter mounting surface toward said perimeter sealing surface, said perimeter mounting surface being configured to define a void space therein.

60 (original). A valve according to Claim 59, further comprising a cavity positioned within said housing substantially surrounding said valve closing member, said perimeter mounting surface facing outwardly of said loop and being positioned within said cavity for mounting therein, said perimeter sealing surface facing inwardly of said loop and extending from said cavity for engagement with said valve closing member.

61 (original). A valve according to Claim 59, further comprising a cavity positioned within and substantially surrounding said valve closing member, said perimeter mounting surface facing inwardly of said loop and being positioned within said cavity for mounting therein, said perimeter sealing surface facing outwardly of said loop and extending from said cavity for engagement with said housing.

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62 (withdrawn). A valve according to Claim 59, wherein said void space comprises a groove extending around said perimeter mounting surface.

63 (withdrawn). A valve according to Claim 62, wherein said groove extends continuously around said entire perimeter mounting surface.

64 (withdrawn). A valve according to Claim 59, wherein said void space comprises a plurality of grooves extending around said perimeter mounting surface.

65 (withdrawn). A valve according to Claim 64, wherein said grooves extend continuously around said entire perimeter mounting surface.

66 (withdrawn). A valve according to Claim 64, wherein said grooves extend around said perimeter mounting surface in a zig-zag pattern.

67 (withdrawn). A valve according to Claim 64, wherein said grooves are positioned in spaced relation around said perimeter mounting surface and oriented transversely to a plane defined by said loop.

68 (withdrawn). A valve according to Claim 67, wherein said grooves are oriented perpendicular to said plane.

69 (withdrawn). A valve according to Claim 59, wherein said void space comprises a plurality of dimples positioned in said perimeter mounting surface.

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70 (withdrawn). A valve according to Claim 69, wherein said dimples are positioned in spaced relation around said perimeter mounting surface.

71 (original). A valve according to Claim 59, wherein said void space is defined by a raised surface portion extending outwardly from said perimeter mounting surface, said void space being adjacent to said raised surface portion.

72 (original). A valve according to Claim 71, wherein said raised surface portion extends around said perimeter mounting surface.

73 (withdrawn). A valve according to Claim 59, wherein said void space is defined by angularly orienting portions of said perimeter mounting surface relative to one another.

Claim 74 (canceled).

75 (currently amended). A valve according to Claim 74 59, further comprising a plurality of said open channels positioned in spaced relation from one another on said one surface around said loop.

76 (currently amended). A valve according to Claim 74 59, further comprising a plurality of said open channels positioned on said first and said second surfaces.